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TO: Commissioner for Patents
Attn: Examiner P. CUEVAS
Patent Examining Corps
Facsimile Center
Washington, D.C. 20231

FROM: Curtis B. Hamre

OUR REF: 8373.234US01
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Title of Document Transmitted:	COMMUNICATION
Applicant:	Atsuhiko Yoneda
Serial No.:	09/818138
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Group Art Unit:	2834
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S/N 09/818138 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	YONEDA	Examiner:	P. CUEVAS
Serial No.:	09/818138	Group Art Unit:	2834
Filed:	March 27, 2001	Docket No.:	8373.234US01
Title:	ELECTRIC POWER STEERING APPARATUS		

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By: _____
Name: Lisa Dorn

COMMUNICATION

Mail Stop NON-FEE AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

On a review of the Amendment filed December 17, 2003, it has been determined that there are misspellings of "divisor" on page 6, paragraph 2, lines 5 and 7 and on line 6 "or" should be --of--. Applicant apologizes for these errors. A substitute page is enclosed for replacement in the Amendment of December 17, 2003.

Respectfully Submitted,

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Dated: January 7, 2004

By _____
Curtis B. Hamre
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CBH:lad

inner rotor arrangement. The outer rotor and inner stator type motor of Sakashita and Kazuo cannot meet the requirements for an electric power steering apparatus motor, particularly the requirement for low inertia. An outer rotor has high inertia. How is it known that the outer rotor and inner stator features of Sakashita and Kazuo should not be combined with the number of poles and the number of slots of one or the other of Coles and Nishiyama? Clearly there is no motivation to take features from Sakashita and Kazuo to use in the motors of Coles and Nishiyama. Not only is there not motivation, but clearly hindsight is being used to select particular features from particular patents to reject the pending claims. The motors shown in Sakashita and Kazuo can be used as ordinary driving motors, but they cannot be used as electric power steering motors. In view of the totally opposite type of motor disclosed, Sakashita and Kazuo should be evaluated as non-relevant prior art references which cannot be reasonably considered with Coles and Nishiyama. The Examiner has not made a prima facia case of obviousness of these claims.

As indicated, Sakashita and Kazuo point away from a motor which has low rotor inertia by disclosing an outer rotor. Coles and Nishiyama point away from the synergistic effect of the limitations of the structure of claim 1 or claim 7. That is, in general, the number of poles of permanent magnets of a rotor of an electric motor and the number of slots (or poles of stator windings) of a stator are so related as to have a common devisor in view of the controllability of the motor. For instance, the motor shown in Coles has six poles and nine slots. For a set of integers 6 and 9 we can find an integer 3 as a common devisor. Similarly, the motor shown in Nishiyama has 8 poles and 12 slots, and we can find an integer 4 as a common divisor for a set of integers 8 and 12. In case of claims 1 and 7, the number of poles is 8 and the number of slots is 9. There is no common divisor found between the integers 8 and 9. By thus selecting the number of poles and slots, the least common multiple between the number of poles and the number of slots, which is direct proportional to the resonant frequency between the rotor and the stator, can be increased up to 72. Compare that with Coles having a least common multiple 18 where integers 6 and 9 and Nishiyama having a least common multiple 24 for integers 8 and 12. As the least common multiple becomes larger, cogging of the motor decreases. Since the least common multiple in the motor of claims 1 and 7 is three or four times the least common multiple of Nishiyama or Coles, the motors of claims 1 and 7 are much better in cogging performance than th motors of Coles and Nishiyama.